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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

AKKAPEDDI, PRASAD R

ART UNIT PAPER NUMBER

2871

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/736,335

Applicant(s)

LEE ET AL.

Examiner

Prasad R Akkapeddi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received

- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO 1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO 152)
- 6) ☐ Other _____

DETAILED ACTION

Response to Amendment

Drawings

1. The drawings filed on 05/05/2003 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftsperson's Patent Drawing Review," PTO-948. In order to avoid abandonment of this application, correction is required in reply to the Office action. The correction will not be held in abeyance.

Response to Amendment

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 1-7 and 13-17, 19, 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kaneko et al. (Kaneko) (U.S. Patent No. 6,404,473).

As to claims 1, 14, 20: Kaneko discloses an in-plane switching mode (transverse field type, Col. 16, lines 37-38) liquid crystal display (LCD), having a first substrate (1) with a switching element (TFT), a second substrate (1), a first electrode (2) and a second electrode (4) on the first substrate; a transparent electrode (5) asymmetrically overlapping (Fig. 2) the first electrode (2) and a liquid crystal layer (LC) between the first substrate and the second substrate.

As to the newly added limitation in the amended claims 1, 14 and 20: Kaneko does disclose gate lines (3) and data lines (2) (Fig. 11) on the first substrate. In fact, for an active matrix type liquid crystal display device, gate

As to claim 2: Kaneko discloses a common electrode (not shown) but refers in Col. 16, line 38) and a data electrode (4).

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As to claim 3: Kaneko discloses the switching device is a transistor (TFT) including a gate electrode (2) on the first substrate a gate insulating layer (6) on the gate electrode and the first substrate, a semiconductor layer (7) on the gate insulating layer and source (3) and drain electrodes (4) on the semiconductor layer.

As to claim 4: Kaneko discloses in Fig. 2 that the switching device (TFT) is a transistor including a gate electrode (2), a source electrode (3) and a drain electrode (4).

As to claim 5: Kaneko discloses that a switching device (transistor (TFT)) includes a gate insulating film (6) on the first substrate (1) and the first electrode (2), the second electrode (4) being formed on the gate insulating film (6) (Fig.2).

As to claim 6: Kaneko discloses that the gate insulating film (6) is formed on the gate electrode (2) and the gate electrode (2) is on the same layer as the first electrode.

As to claim 7: Kaneko discloses a protection film (8) between the transparent electrode (5) and the second electrode (4) and wherein the first electrode (2), the second electrode (4) and the transparent electrode (5) are all on different layers (Fig. 2).

As to claim 13: Kaneko discloses in Fig. 2 that the first electrode (2) has an outermost portion and the transparent electrode (5) is asymmetrical with respect to the outermost portion of the first electrode.

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As to claims 15-17 and 19: Kaneko discloses the first electrodes (2) and the second electrodes (4) are on planes different from each other and the second electrodes are on the gate insulating film (6) and the transparent film (5) includes indium tin oxide (ITO).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8-12, 18, 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko in view of Kim et al. (Kim) (U.S. Patent No. 5,907,379).

a. Kaneko discloses a shielding electrode (10) on the second substrate (1), which is also black matrix. However Kaneko does not explicitly disclose that the first and second electrodes and the shielding electrode form a tilted electric field or that the shielding electrode includes Chrome. Kim on the other hand, in disclosing a similar in-plane switching mode LCD, discloses a black matrix pattern (3) made of Chromium (Col.5, lines 23-26) that also serves as a shielding electrode and the transparent electrode (402) includes ITO (Col. 4, lines 201-21) and the distortion of the electric fields (Col. 5, line 59). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the specific configuration as disclosed by Kim to the device

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disclosed by Kaneko to enhance the aperture ratio of the IPS LCD and to reduce defects.

7. Claims 27-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko and Kim as applied to claims 1-26 above, and further in view of Lee et al. (Lee) (U.S. Patent No. 6,466,289).

As to claims 27-47: Kaneko and Kim disclose all the recited features, including gate lines (3) and data lines (2) and color filters (Kaneko, 9), except the placement of common electrodes and its relationship to either the transparent electrode or the field distorting electrode. Lee on the other hand, in disclosing a similar IPS LCD discloses common electrodes (12) on the first substrate, a transparent ITO electrode (60, 80), the height of the first and second parts of the transparent electrodes (Figs. 8 and 9), field distorting electrode (80), source and the drain electrodes (61, 62) and the protection film (70). Lee also discloses the use of orientation film (not shown) (Col. 3, line 58). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the specific configuration as disclosed by Lee to the device disclosed by Kaneko and Kim to reduce light leakage in an LCD, to prevent shorts between data line and the common electrode and to increase the aperture ratio.

As to claims 48-56: Since the recited limitations in these claims merely relate to the formation of the device, it is obvious to one having ordinary skill in the art that the steps for the formation of the entire device, it is obvious to one having ordinary

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skill in the art at the time the invention was made to adapt the method of fabricating this device using the teachings of Kaneko, Kim and Lee such that a device is made practicable and to reduce light leakage in an LCD, to prevent shorts between data line and the common electrode and to increase the aperture ratio.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Nishiki et al. (U.S. Patent No. 5,946,060) who explicitly teaches the use of gate lines (1) and data lines (2) in a liquid crystal display device.

Response to Arguments

9. Applicant's arguments with respect to claims 1-56 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 703-305-4767. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0530.

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RRF

July 2, 2003

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